

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 102 60 137.2 | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/EP2003/014058 | International filing date (day/month/year) 11 December 2003 (11.12.2003) | Priority date (day/month/year) 20 December 2002 (20.12.2002) |
| International Patent Classification (IPC) or national classification and IPC B29C 35/08 | | |
| Applicant SCHROETER, Johannes | | |

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| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. |
| 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows: <div style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application</div> |

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| Date of submission of the demand 09 July 2004 (09.07.2004) | Date of completion of this report 11 January 2005 (11.01.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2003/014058

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-15 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1-17 _____ received by this Authority on 23 December 2004 (23.12.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1/1 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/14058

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-17 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-17 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-17 | YES |
| | Claims | | NO |

2. Citations and explanations

1. PRIOR ART

Reference is made to the following documents, D1 to D7:

D1: WO 96/18493 A
D2: US-A-5 849 035
D3: US-A-4 339 303
D4: US-A-4 365 060
D5: WO 98/14314 A
D6: XP 002283092
D7: XP 002283093.

2. NOVELTY (PCT Article 33(2)) AND INVENTIVE STEP (PCT Article 33(3)).

2.1 Document D1, considered to be the closest prior art, discloses (the references between parentheses relate to D1) a method for the plastic deformation of polymers, a polymer being treated under the simultaneous effects of a compressive force and thermal energy (page 3, lines 15-29; figures 1 to 6).

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D1 does not disclose or suggest the additional features of the amended claim 1, namely "simultaneous effect of a shearing force" and the treatment of the polymer with "electromagnetic radiation of a predetermined wavelength of between 0.8 and 100 μm ".

In consequence, the subject matter of claim 1 appears to be novel (PCT Article 33(2)) and inventive (PCT Article 33(3)), despite the lack of clarity referred to in point 4.1 of the present international preliminary examination report.

- 2.2 Document D1 further discloses (the references between parentheses relate to D1) a device for the deformation of moulded polymer bodies, said device comprising means for receiving a moulded polymer body (figure 1: "host pipeline 20"), means for exerting a compressive force on the polymer (figures 1 and 2: "compressed gas 16"; page 3, lines 30-35; page 7, line 35 to page 8, line 3), and means for heating or dissipating heat (page 3, line 33; figures 1 and 2).

D1 does not disclose or suggest the additional features of the amended claim 12, namely "means for exerting a shearing force" and "means for irradiating the polymer with electromagnetic radiation of a predefined wavelength of between 0.8 and 100 μm ".

In consequence, the subject matter of claim 12 (PCT Article 33(2)) appears to be novel and inventive (PCT
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Article 33(3)), despite the lack of clarity referred to in point 4.1 of the present international preliminary examination report.

- 2.3 Moreover, the subject matter of product claim 16 also appears to be novel (PCT Article 33(2)) and inventive (PCT Article 33(3)) since the method whereby said subject matter can be arrived at appears likewise to satisfy the requirements of PCT Article 33(2) and PCT Article 33(3). The applicant should note point 4.2 of the present international preliminary examination report.

3. INDUSTRIAL APPLICABILITY

The PCT Contracting States do not have uniform criteria for assessing the industrial applicability of claims 1 to 17 in their present form. Patentability may also depend on the wording of the claims. In the present case, industrial applicability is acknowledged since the examiner does not consider that the subject matter of said claims comes under PCT Rule 67.1(i) to (vi).

MISCELLANEOUS OBSERVATIONS

- 4.1 The expression "polymer" used in the claims is vague and unclear and leaves the reader uncertain as to the meaning of the technical feature in question since it is not clear whether said term is intended to relate to a (moulded) polymer body or an (unstructured) polymer compound (see also the

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subject matter of claim 17). In consequence, the subject matter of said claim is not clearly defined (PCT Article 6).

4.2 Claims directed to an article are regarded as being directed to a product, not a method. Contrary to the requirements of PCT Article 6 in relation to clearly drafted claims, the subject matter of claim 16 ("polymer") is defined by method steps instead of by appropriate (technical) product features.

4.3 The description is not consistent with the claims (PCT Rule 5.1(a)(iii)).

4.4 Contrary to PCT Rule 5.1(a)(ii), the description does not cite D1 or indicate the relevant prior art disclosed therein.